

Appl. No. 09/601,849
Amdt. dated February 9, 2004
Reply to Office Action of October 22, 2003

REMARKS/ARGUMENTS

In the Office Action, objection was made to the Drawings and to the disclosure. These objections are believed to have been overcome in the previously filed amendment.

Claims 23, 32, 36, 37, and 42 were rejected under 35 USC 103(a) as being unpatentable over Welch (US 4,783,114) in view of Doolittle (US 5,181,759). Claims 24 and 31 were rejected under 35 USC 103(a) as unpatentable over Welch in view of Doolittle as applied to claims 23, 32, 36, 37, and 42 above and further in view of Beaulat. Claims 25, 28, 29, and 30 were rejected under 35 USC 103(a) as being unpatentable as applied to claims 23, 32, 36, 37, and 42 above, and further in view of Staser et al. ('553). Claims 26, 27 and 41 are rejected under 35 USC 103(a) as being unpatentable over Welch in view of Doolittle as applied to claims 23, 32, 36, 37, and 42 above, and further in view of Wurm et al. Claims 33, 34 and 35 are rejected under 35 USC 103(a) as unpatentable over Welch in view of Doolittle as applied to claims 23, 32, 36, 37, and 42 above, and further in view of Stein et al. Claims 39, 40, 43 and 44 are rejected under 35 USC 103(a) unpatentable over Welch in view of Doolittle as applied to claims 23, 32, 36, 37, and 42 above, and further in view of Ishikawa.

With respect to the rejections under 35 USC 103, claim 23 is amended further in order clarify the difference between the present invention and the cited prior art, thereby to overcome this ground of rejection and to secure allowable subject matter in the claims.

In the amended claim, the recital of the two solid boundary layers (52) with the porous central layer (54) lying between the two solid boundary layers is shown in present Figs. 13-16 and 19-22. Furthermore, claim 23 states that the solid boundary layers (52) and the foamed, porous central layer (54) are zones of a single body, as is also shown in Figs. 13-16 and 19-22. It is evident from the description in the specification and the drawing that neither the foamed, porous central layer nor the two solid boundary layers are separately produced parts, rather, they constitute a single unitary structure.

Lines 1 to 18 of page 2 of the present specification disclose in connection with page 4, lines 22 to 26, page 9, line 37 to page 10, line 2, page 16, lines 25 to 28, and claim 14, that the door internal element according to the present invention is a support element in the form of a single body produced by foam injection, accomplished by thermoplastic foam injection molding, wherein the single body has two skin-like, unfoamed zones, i.e. two solid boundary layers, and a foamed core, i.e. a foamed, porous central layer.

Neither the foamed, porous central layer 54 nor the two solid boundary layers 52 are separately produced parts or layers. The door inner element, consisting of the foamed central layer 54 and the two solid boundary layers 52, is produced in a single foaming operation, and is not produced by separately constructed layers that are subsequently laminated together (specification page 2, lines 1-3, page 4 lines 22-26, page 15 lines 5-16, and page 16, lines 25-28). The single body is produced in a single injection molding process (specification, page 5 lines 21-25, page 10 lines 6-8, and page 13 lines 13-16).

Figures 4 to 10 show different cross sections taken along the lines IV-IV to X-X of Figure 1. Also from the hatching in Figures 4 to 10 it is evident that door internal element 3 is a single body produced by foam injection.

None of the references cited by the Examiner discloses or suggests a door internal element as claimed in amended claim 23.

The analysis of the cited art, as provided in the previously filed response, is repeated here for convenience.

Welch (US 4,783,114) discloses in Figures 3 and 4 a vehicle door 10 with an arm rest 84. The door 10 includes an outer panel 12 and an inner panel 72 which are attached together in spaced relation by welding and then flanging the peripheral edges. The door inner panel 72 includes a cutout which receives a support panel 74 of sheet metal which is adapted for attachment to the inner panel 72 by nut and bolt assemblies 76 and 78. An energy absorbing member 80, shown as molded-foam, may be molded in situ in the support panel 74 of sheet metal.

The arm rest 84 includes a substrate 86 of sheet metal covered by molded foam cushion 88.

A plurality of hanger straps, one of which is shown at 90, includes an upper end 92 which extends through an aperture in the support panel 74 and through an energy absorbing element 80. The lower edge of the sheet metal substrate 86 includes a tab 96 which seats in the energy absorbing element 80 at the lower part of a cavity 98. A door trim panel 100 overlies the energy absorbing element 80 and has a central opening 102 which fits around the arm rest 84.

The arm rest 84 can be pivoted inwardly into the cavity 98 about the tab 96 as permitted by yielding of the hanger strap 90. In order to permit the outboard yielding movement of the hanger strap 90, the energy absorbing element 80 is molded with integral clearance slots 103 which align with the hanger straps 90 to permit such outboard movement of the hanger straps 90. See Figures 3 and 4 of Welch.

Thus, in contrast to the statement of the Examiner, reference numeral 90 does not denote a solid boundary layer, but a hanger strap, and reference numeral 103 does not denote a seal body, but integral clearance slots of the energy absorbing element 80.

Moreover, Welch does not disclose or suggest a door internal element which is a support element produced by foam injection. In particular, Welch does not disclose or suggest a door internal element having two solid boundary layers and a foamed, porous central layer, wherein said solid boundary layers and said foamed, porous central layer are zones (shown in cross section in the drawing) of one single body produced by foam injection.

Furthermore, Welch does not disclose or suggest a door internal element which is provided with a sealing body disposed at an edge of door internal element.

The Examiner combines the teaching of Welch with the teaching of Doolittle.

Doolittle (US 5,181,759) discloses an arm rest construction for a vehicle door 10. The vehicle door 10 has a door inner panel 12 which is concealed behind a door trim panel assembly 34. The door trim panel assembly 34 is comprised of a relatively rigid

substrate 36 and a layer of vinyl or plastic trim 38 having a layer of foam 40 injected therebetween.

Thus, Doolittle does not disclose or suggest a door internal element having two solid boundary layers and a foamed, porous central layer, wherein said solid boundary layers and said foamed, porous central layer are zones or lamina of one single laminated unitary body produced by foam injection.

Finally, Doolittle does not disclose or suggest a door internal element which is provided with a sealing body disposed at an edge of door internal element. Since neither Welch nor Doolittle disclose the unitary lamination of foam and solid material of amended claim 23, there would be motivation to combine these references, and a combination of their teachings would not suggest the invention of amended claim 23.

For clarity of understanding the foregoing argument, it is noted that the term "foam injection", the process by which the door inner element according to the present invention is produced, is a thermoplastic foam injection molding.

Claims 29 and 34 have been amended editorially for improved grammar.

In the event there are further issues remaining the Examiner is respectfully requested to telephone attorney to reach agreement to expedite issuance of this application.

Applicant respectfully requests that a timely Notice of Allowance be issued in this case.

Since the present claims set forth the present invention patentably and distinctly, and are not taught by the cited art either taken alone or in combination, this amendment is believed to place this case in condition for allowance and the Examiner is respectfully requested to reconsider the matter, enter this amendment, and to allow all of the claims in this case.

Respectfully submitted,

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by: _____

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CERTIFICATE OF MAILING UNDER 37 CFR SECTION 1.8(a)

I hereby certify that the accompanying Supplement Amendment is being deposited with the United States Postal Service as first class mail in an envelope addressed to: Commissioner for Patents, PO Box 1450, Alexandria, VA 22313-1450, on February 9, 2004.

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